

REMARKS

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the following remarks.

Claims 1, 4, 5, 11, 12, 19-20, 22, 24, 28 31, 34 and 35 have been amended. Support for the amendments to Claim 1, 5, 19, 20, 35 and new Claim 36 are discussed in section I below. The amendments to Claims 11, 12, 22, 24, 28, 31 and 34 are made to clarify antecedent basis issues in these claims due to amendment of their respective independent claims. Therefore, Claims 1-5, 7, 9-12, 14-20, 22, 24-26, 28 and 30-36 are currently pending in the application.

I. Rejection of Claims 1-5, 7, 9-12, 14-20, 22, 24-26, 28, 30-35 under 35 U.S.C. §112 first paragraph

The Examiner rejected the above claims on the grounds that the Examiner could find no support for previous amendments to recite a pre-heating step in Claims 1, 19, 35. In response, the Applicants have amended Claims 1, 19 and 35 to address the Examiner's concerns and to clarify the claims. Support for these amendments, as well as amendments to Claims 5 and 20 and new Claim 36, include paragraph [0014] (emphasis added):

[0014] It is known that other tools can be used to deposit the arsenic-doped polysilicon layer 30, including a hot plate tool wherein the wafer is heated through physical contact with a resistively heated chuck. ... The hot-plate process is performed at about 700°C with a nitrogen flow through the tool chamber both before and during deposition of the arsenic-doped polysilicon layer 30 on the surface 80. It is known that a silicon surface can lose the hydrogen termination condition upon heating. Therefore, the surface 80 is likely contaminated with impurities from the hot plate deposition system or impurities present in the nitrogen gas flow during a temperature stabilization step performed at about 700°C while maintaining a nitrogen flow, before initiating formation of the arsenic-doped polysilicon layer 30.

II. Rejection of Claims 1-3, 5, 10-12, 14, 16-20, 25, 26, 28, 30, 33-35 under 35 U.S.C.

§102

The Examiner continues to rejected Claims 1-3, 5, 10-12, 14, 16-20, 25, 26, 28, 30, 33-35 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Publication No. 2002/0098627 Pomarede *et al.*, ("Pomarede").

Independent Claims 1, 19 and 35 now recite among other things, stabilizing the surface at about 700°C through physical contact with a hot plate and with a flow of nitrogen gas in a deposition chamber, wherein contaminants are formed on the surface from the hot plate or the nitrogen gas.

Claims 1 and 19 further recite exposing the surface to a nitrogen-containing gas comprising nitrogen fluoride at a temperature range of between about 500°C and 800°C and at a flow rate to remove contaminants from the surface.

Pomarede, as applied by the Examiner does not teach or suggest the above-recited surface stabilizing step. For instance, the Examiner has not shown how Pomarede discloses that his SC1 process or hydrogen bake process (Pomarede, paragraph [0061]) stabilizes the surface at about 700°C through physical contact with a hot plate and with a flow of nitrogen gas in a deposition chamber. Nor has the Examiner shown any indication or awareness by Pomarede of the producing contaminants formed from the hot plate or the nitrogen gas used in the stabilization step. Nor has the Examiner shown where Pomarede discloses then removing the contaminants from the surface by exposing the surface to a nitrogen-containing gas comprising nitrogen fluoride at a temperature of between about 500°C and 800°C. Rather, Pomarede's excited species treatment (Pomarede, paragraphs [0062] and [0063]) that may include NF₃, among numerous other gases, is tuned to break surface bonds such as hydrogen-silicon bonds and Si-Si bonds, and to form new ones.

Therefore, the Examiner has not show that Pomarede teaches or suggests each and every element of the claimed invention. As such Pomarede is not an anticipating references of Claims 1, 19 and 35 and the claims dependent thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to these Claims.

III. Rejection of Claims 4, 7, 9, 15, 22, 24 and 31-32 under 35 U.S.C. § 103

The Examiner continues to reject Claim 4 under 35 U.S.C. § 103 as unpatentable over Pomarede in view of U.S. Patent No. 6,350,322 to Yates et al. ("Yates"). Claims 7, 9, 15, 22, 24 and 31-32 are still rejected under 35 U.S.C. § 103 as being unpatentable over Pomarede.

The Applicants disagree because as argued above, Pomarede fails to teach or suggest all of the elements of Claims 1 and 19, and because the Examiner does not apply Yates to remedy Pomarede's deficit teachings.

In view of the foregoing remarks, the references as applied by the Examiner do not support the rejection of Claims 4, 7, 9, 15, 22, 24 and 31-32 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner to withdraw these rejections.

IV. Conclusion

For the foregoing reasons, applicant respectfully submits that the foregoing claims, as amended, are allowable. Therefore, a timely Notice of Allowance for Claims 1-5, 7, 9-12, 14-20, 22, 24-26, 28 and 30-36 is respectfully requested.

Should it facilitate allowance of the application, the Examiner is invited to telephone the undersigned attorney. The Commissioner is hereby authorized to charge any additional payment that may be due or credit any overpayment to Deposit Account No. 08-2395.

Respectfully submitted,

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